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SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:

David E. MCDYSAN et al.

Conf. No.: 7587

Application No.: 09/723,480

Group Art Unit: 2155

Filed: November 28, 2000

Examiner: Bates, K.

Customer No.: 25537

Attorney Docket: RIC 00 044

Client Docket: 09710-1234

For: MESSAGE, CONTROL AND REPORTING INTERFACE FOR A DISTRIBUTED
NETWORK ACCESS SYSTEM

REVISED APPEAL BRIEF

Honorable Commissioner for Patents
Alexandria, VA 22313-1450

Dear Sir:

This Revised Appeal Brief is submitted in support of the Notice of Appeal dated January 26, 2005, and in response to the Notification of Non-Compliant Appeal Brief dated April 19, 2005.

I. REAL PARTY IN INTEREST

MCI, Inc. is the real party in interest.

II. RELATED APPEALS AND INTERFERENCES

Appellants are unaware of any related appeals and interferences.

III. STATUS OF THE CLAIMS

Claims 1-40 are pending in this appeal. No claim is allowed. This appeal is therefore taken from the final rejection of claims 1-40 on September 27, 2004.

IV. STATUS OF AMENDMENTS

The amendment to claim 6 filed November 18, 2004 has been entered and is relied upon in this appeal.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The present claimed invention addresses problems associated with a network access system. More particularly, the present claimed invention relates to an IP-based communication network including a network access system having distributed and separate routing, signaling, service control, filtering, policy control and other functionality from IP forwarding. (Specification, p. 1, lines 25-29)

Conventional monolithic router designs have limited flexibility and extensibility. The present claimed invention recognizes that it would be desirable, in view of the rapid growth of Internet traffic, to dynamically provision, configure, and/or reallocate access capacity to IP-based services. Because access capacity is necessarily limited and providing additional access capacity is a major cost component of networks, the enforcement of intelligent admission control policies and provision of differing qualities of service is vital to the efficient utilization of available access capacity. However, conventional edge routers are not capable of classifying a wide variety of traffic types while enforcing policy controls or of responding to dynamic requests for capacity, and this functionality is difficult to incorporate within currently deployed monolithic edge routers. The present claimed invention accordingly recognizes that it would be desirable to

provide the above as well as additional policy control, network monitoring, diagnostic, and security services in commercialized hardware, while permitting these services to be tailored to meet the needs of individual customers and service providers. (Specification, p. 3, line 30 - p. 4, line 14)

A distributed network access system architecture including at least an external processor and a programmable access device is introduced. The network access system may further include an access router coupled to the programmable access device.

The external processor transmits a control message to the programmable access device to establish a configuration of the programmable access device. The programmable access device then communicates messages to the external processor for service processing in accordance with the configuration. For example, the control message may be a filter control message that establishes a configuration of a packet header filter in the programmable access device. The packet header filter then communicates network messages filtered from a packet flow in accordance with the configuration established by the control message. To limit communication of network messages from the programmable access device to the external processor, the programmable access device can send a message setting message interface flags in the programmable access device. The external processor may also transmit a monitor control message to the programmable access device to establish a configuration of a monitor in the programmable access device. The programmable access device then communicates reporting messages to the external processor in response to the configuration of the monitor.

Thus, conventional, proprietary edge routers are replaced with a distributed network access system that allocates the functionality of traditional edge routers (as well as additional functionality) among three logical modules: a programmable access device, an external processor,

and an access router. Basic routing of packets between input and output ports of the access network is performed by the access router. However, forwarding and generic traffic conditioning functions, such as marking, policing, monitoring, shaping, and filtering, are implemented in the programmable access device, and service functions, such as message interpretation, signaling, admission control, and policy invocation, are implemented in the external processor. This distribution of functionality results in numerous advantages, including improved scalability, flexibility, extensibility, interoperability, security, and service provisioning. (Specification, p. 5, line 3 - p. 6, line 7)

If filtering functionality of the programmable access device (PAD) 40 detects packet flows for which services, additional to typical services afforded by the configuration to incoming and outgoing packets are appropriate, the programmable access device 40 passes appropriate messages to the external processor 42 for service processing via a Message, Control, and Reporting Interface (MCRI) 58, which can be accessed via an Application Programming Interface (API) on the programmable access device 40 and external processor 42. Distributing functionality between access router 44, programmable access device 40 and external processor 42 in this manner gives the service provider (or even third parties) the freedom to extend and modify existing services, create new services, or add more processing power to external processor 42 without adversely affecting the forwarding performance of the programmable access device 40 and the routing performance or functionality of access router 44.

To implement a desired functionality for programmable access device 40 and external processor 42, the service provider (or even a customer or third party) can define policy rules in the policy database 46 of one or more servers 48 (also referred to as a policy decision point (PDP)). Policy server 48 then makes policy decisions that control the functionality and operation

of programmable access device 40 and external processors 42 by reference to the policy rules stored in policy database 46. Policy server 48 communicates policy decisions and associated configuration parameters for external processor 42 via a Service Policy Interface (SPI) 56, which can be accessed, for example, via an application program interface (API) on policy server 48 and external processor 42. Communication via Service Policy Interface 56 can employ any of a number of policy query protocols, including Common Open Policy Service (COPS) and Lightweight Directory Access Protocol (LDAP), which are respectively defined by Internet Engineering Task Force (IETF) RFCs 2748 and 2251. External processor 42 relays configuration parameters for programmable access device 40, if any, to programmable access device 40 via Message, Control, and Reporting Interface 58. (Specification, p. 12, lines 4-31, FIGs. 2, 4)

Generally speaking, the functional modules of programmable access device 40 are logically arranged in incoming (e.g., from customer router 32) and outgoing (e.g., to customer router 32) traffic paths, with the incoming path including packet header filter 80, marker/policer 82, monitor(s) 84, forwarding table 86, and output buffers and scheduler 88. The outgoing path similarly includes packet header filter 90, forwarding table 86, monitor(s) 92, marker/shaper 94, and output buffers and scheduler 96. The functions of all of these functional modules can be independently configured or programmed by an external processor 42 through Message, Control, and Reporting Interface 58.

Incoming packets received from customer router 34 at the external interface of programmable access device 40 are first processed by packet header filter 80, which distinguishes between various message types using any one or a combination of the protocol type, Source Address (SA), Destination Address (DA), Type Of Service (TOS), Diffserv Codepoint (DSCP), Source Port (SP), Destination Port (DP), and other fields of a packet (e.g., layer 4 and higher

layer fields such as the SYN, ACK, RST, and FIN TCP flags) upon which packet header filter 80 is configured to filter. In addition to filtering on layer-3 information, packet header filter 80 has the ability to identify higher layer (i.e., layer 4-7) message types or specific fields and forward those messages from/to external processor 42 based on the configured filter parameters. Thus, based upon its filter configuration and the fields of an incoming packet, packet header filter 80 directs the packet either to an external processor 42 via message interface 100 or to a specific marker/policer 82. Message interface 100 may also inject a packet specified by external processor 42 into either of packet header filters 80 and 90. (Specification, p. 14, lines 7-32, FIGs. 2, 3)

Thus, independent claim 1 is directed to a method of communication in a network access system including an external processor and a programmable access device (e.g., specification, p. 5, lines 3-5, p. 11, lines 19-23, FIG. 2, refs 31, 40, 42), the method comprising: transmitting a control message from the external processor to the programmable access device to establish a configuration of the programmable access device (e.g., specification, p. 5, lines 8-10, p. 12, lines 30-31, p. 25, line 2- p. 26, line 14); receiving, by the programmable access device, messages from a first network external to the network access system via a first network interface (e.g., specification, p. 14, lines 7-32, Table III on pp. 26-27, FIGs. 2, 3, refs 32, 44, 80, 90); communicating a first portion of the received messages from the programmable access device to the external processor for service processing in accordance with the configuration (e.g., specification, p. 12, lines 4-9, p. 14, lines 7-32, FIGs. 2, 3, refs 40, 42, 58, p. 30, line 20 - p. 31, line 27, p. 34, lines 9-15, FIGs. 6, 7B-7G, 8A-8C, 9A-9E, 10A-10E); and routing a second portion of the received messages not communicated to the external processor from the network access system via a second network interface different from the first network interface to a

second network external to the network access system, wherein the second network is different from the first network (e.g., specification, p. 15, line 29 - p. 16, line 30, p. 36, lines 25-27, p. 42, line 29 - p. 43, line 32, p. 49, lines 21-23, p. 50, lines 18-25, FIGs. 2, 3, 9A-9E, 10A-10G, refs 32, 40, 44, 88, 96).

Independent claim 21 is directed to a network access system (e.g., specification, p. 5, lines 3-4, p. 11, lines 6-7, FIG. 2, ref 31), comprising: an external processor that transmits a control message specifying a configuration (e.g., specification, p. 5, lines 8-10, p. 12, lines 30-31, p. 25, line 2- p. 26, line 14, FIGs. 2, 4, ref 42); and a programmable access device that receives messages from a first network external to the network access system via a first network interface (e.g., specification, p. 14, lines 7-32, Table III on pp. 26-27, FIGs. 2, 3, 4 refs 32, 40, 44, 80, 90), and that, responsive to the control message, establishes the configuration specified by the control message (e.g., specification, p. 5, lines 8-10, p. 25, line 14 - p. 26, line 22) and communicates a first portion of the received messages to the external processor for service processing in accordance with the configuration (e.g., specification, p. 12, lines 4-9, p. 14, lines 7-32, FIGs. 2, 3, refs 40, 42, 58, p. 30, line 20 - p. 31, line 27, p. 34, lines 9-15, FIGs. 6, 7B-7G, 8A-8C, 9A-9E, 10A-10E), and forwards a second portion of the received messages not communicated to the external processor for routing, via a second network interface different from the first network interface, to a second network external to the network access system, wherein the second network is different from the first network (e.g., specification, p. 15, line 29 - p. 16, line 30, p. 36, lines 25-27, p. 42, line 29 - p. 43, line 32, p. 49, lines 21-23, p. 50, lines 18-25, FIGs. 2, 3, 9A-9E, 10A-10G, refs 32, 44, 88, 96).

Independent claim 40 is directed to a distributed router (e.g., specification, p. 5, lines 3-4, p. 11, lines 6-7, FIG. 2, ref 31) comprising: a first network interface through which packets are

communicated with a first network (e.g., specification, p. 14, lines 7-32, Table III on pp. 26-27, FIGs. 2, 3, 4, refs 32, 34, 40, 44, 80, 90); a second network interface different from the first network interface through which packets are communicated with a second network different from the first network (e.g., specification, p. 15, line 29 - p. 16, line 30, FIGs. 2, 3, refs 32, 44, 86, 88, 96); a programmable access device configured to input messages from the first network via the first network interface (e.g., specification, p. 13, line 26 - p. 14, line 32, Table III, pp. 26-27, FIGs. 2, 3, 4 refs 32, 40, 44, 80, 90); and an external processor configured to receive, from the programmable access device, a first portion of the input messages (e.g., specification, p. 5, lines 8-10, p. 12, lines 4-9, p. 14, lines 7-32, FIGs. 2, 3, 4, refs 40, 42, 58, p. 25, line 2- p. 26, line 14, p. 30, line 20 - p. 31, line 27, p. 34, lines 9-15, FIGs. 6, 7B-7G, 8A-8C, 9A-9E, 10A-10E) and to transmit a control message to the programmable access device specifying a configuration to control the selection of the first portion (e.g., specification, p. 5, lines 8-10, p. 12, lines 4-9, p. 12, lines 30-31, p. 14, lines 7-32, FIGs. 2, 3, 4, refs 40, 42, 58, p. 25, line 2- p. 26, line 14, p. 30, line 20 - p. 31, line 27, FIGs. 6, 7B-7G, 8A-8C, 9A-9E, 10A-10E), wherein the programmable access device forwards a second portion of the input messages not received by the external processor for routing via the second network interface to the second network (e.g., specification, p. 15, line 29 - p. 16, line 30, p. 36, lines 25-27, p. 42, line 29 - p. 43, line 32, p. 49, lines 21-23, p. 50, lines 18-25, FIGs. 2, 3, 9A-9E, 10A-10G, refs 32, 44, 88, 96).

Dependent claim 26 relates to the network access system of Claim 24, wherein the monitor control message specifies a threshold activity level (e.g., specification, p. 5, lines 19-21, p. 22, line 32 - p. 23, line 26, p. 24, lines 13-24, Table II on pp. 24-25, p. 25, line 14 - p. 26, line 22, p. 38, line 25 - p. 39, line 2, FIGs. 7A-7G).

Dependent claim 14 relates to the method of Claim 1, wherein transmitting a control message from the external processor to the programmable access device to establish a configuration of the programmable access device comprises transmitting a session deletion control message; and the method further comprises the programmable access device deleting a session specified by the session deletion control message (e.g., specification, p. 33, line 7- p. 34, line 7, p. 37, lines 11-31, p. 38, line 25 - p. 39, line 3, FIGs. 2, 3, 4, 7A, 7D 7F, refs 40, 120, 140, 142, 144, 160, 172, 182).

Dependent claim 10 relates to the method of Claim 1, wherein transmitting a control message comprises transmitting a control message to establish a configuration of a scheduler and one or more associated output buffers in the programmable access device (e.g., specification, p. 15, line 29 - p. 16, line 9, FIGs. 2, 3, 4, refs 88, 96, p. 16, lines 24-30, p. 18, lines 4-31, p. 25, line 14 - p. 26, line 22).

Dependent claim 13 is directed to the method of Claim 1, and further comprising in response to service processing by the external processor, injecting a packet from the external processor into packet flow through the programmable access device (e.g., specification, p. 14, lines 7-32, p. 19, lines 22-31, p. 25, lines 6-8, Table III on pp. 26-27, FIGs. 2, 3, 4, refs 42, 100, 122, 80, 90).

Dependent claim 5 relates to the method of Claim 4, wherein transmitting a monitor control message comprises transmitting a control message to establish a threshold number of allowed retransmissions (e.g., specification, p. 5, lines 19-21, p. 22, line 32 - p. 23, line 26, FIGs. 2, 3, 4, refs 102, 122, 42, p. 25, line 14 - p. 26, line 22, p. 37, lines 11-31, FIGs. 7A, 7D, p. 38, line 25 - p. 39, line 3, FIGs. 7A, 7F).

Dependent claim 36 relates to the network access system of Claim 21, wherein the external processor comprises a control processor that outputs said control message and an application programming interface through which said control processor is accessed (e.g., specification, p. 12, lines 22-31, p. 18, line 19 - p. 27, line 12, FIGs. 2, 3, 4, refs 42, 48, 56, 58, 120, 121, 122).

Dependent claim 23 relates to the network access system of Claim 22, the external processor comprising means for limiting communication of network messages from the programmable access device to the external processor by sending the programmable access device a message setting message interface flags in the programmable access device (e.g., specification, p. 5, lines 16-19, p. 25, lines 8-12, Table III on pp. 26-27, p. 26, lines 3-10, FIGs. 2, 3, 4, refs 100, 102, 122).

Dependent claim 31 relates to the network access system of Claim 21, wherein: the control message specifies a source from which packets are not to be accepted (e.g., specification, p. 16, lines 1-3, Table III on pp. 26-27, p. 49, lines 11-16, p. 50, lines 7-15, FIGs. 10F, 10H); and the programmable access device comprises means for dropping packets from the specified source (e.g., specification, p. 25, line 14 - p. 26, line 22, p. 49, lines 11-16, p. 50, lines 11-16, FIGs. 2, 3, 4, 10F, 10H, refs 48, 120, 40).

Dependent claim 32 relates to the network access system of Claim 21, the external processor comprising means, responsive to service processing by the external processor, for injecting a packet into packet flow through the programmable access device (e.g., specification, p. 14, lines 7-32, p. 19, lines 22-31, p. 25, lines 6-8, Table III on pp. 26-27, FIGs. 2, 3, 4, refs 42, 100, 122, 80, 90).

Dependent claim 33 relates to the network access system of Claim 21, wherein the control message comprises a session deletion control message; and the programmable access device comprises means for deleting a session specified by the session deletion control message (e.g., specification, p. 25, line 14 - p. 26, line 14, Table III on pp. 26-27, p. 33, line 7- p. 34, line 7, p. 35, lines 20-24, p. 37, lines 11-31, p. 38, line 25 - p. 39, line 3, FIGs. 2, 3, 4, 7A, 7B, 7D 7F, refs 40, 120 120, 140, 142, 144, 160, 172, 182, 194).

Dependent claim 35 relates to the network access system of Claim 21, the external processor and said programmable access device each comprising means for exchanging keepalive messages (e.g., specification, p. 23, lines 18-26, Table II on pp. 24-25, p. 26, lines 16-22, Table III on pp. 26-27, p. 27, lines 23-25, p. 28, lines 7-16, FIGs. 2, 3, 4, 5A, refs 40, 42, 100, 102, 120, 126).

Dependent claim 37 relates to the network access system of Claim 21, the programmable access device comprising means, responsive to said control message, for sending an acknowledgement to said external processor (e.g., specification, p. 22, lines 11-15, Table II on pp. 24-25, p. 28, lines 7-16, p. 28, line 24 - p. 29, line 12, p. 32, line 15 - p. 33, line 17, p. 34, lines 9-15, p. 36, lines 29-32, p. 40, lines 15-23, FIG. 4, refs, 40, 120, FIGs. 5A, 5B, 7A, 7C-7G, 8A).

Dependent claim 38 relates to the network access system of Claim 21, wherein: the external processor comprises a plurality of service controllers that provide service processing (e.g., specification, p. 18, lines 4-31, p. 23, lines 28-30, FIG. 4, ref 120); and the programmable access device comprises means for communicating a state of a session to the external processor in response to failure of a service controller servicing the session (e.g., specification, p. 22, line 32 - p. 24, line 10, Table II on pp. 24-25, p. 27, line 3 - p. 29, line 12, FIGs. 2, 3, 4, refs 40, 102, 120, 122, FIGs. 5A, 5B, 7A, 7F).

In summary, a distributed network access system consistent with features of the present claimed invention replaces a monolithic edge router with a programmable access device including at least filtering and forwarding functionality, an external processor having one or more service-specific controllers that implement policy-based control of the programmable access device, and an access router that performs basic routing. This distributed architecture has numerous benefits over conventional monolithic router architectures, including scalability, flexibility, extensibility, interoperability, security, and service provisioning. (Specification, p. 50, line 29 - p. 51, line 5)

The exemplary references to the specification and drawings enumerated herein are believed to provide a “concise explanation of the subject matter” of the enumerated claims, in compliance with the Notification of Non-Compliant Appeal Brief dated April 19, 2005. The exemplary references to the specification and drawings enumerated herein are not intended to be exhaustive of all explanations of the subject matter defined by the claims that is provided by the specification and drawings, as such exhaustive enumeration would involve citing almost all of the specification and drawings for each claim.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Whether claims 1, 4, 6, 8-9, 14-16, 18-21, 24, 26, 28, 33-35, and 37-40 are anticipated under 35 U.S.C § 102(b) by *Gibson al.* (U.S. 6,680,943).

Whether claims 2, 7, 10-12, 22, 27, and 29-31 are obvious under 35 U.S.C. § 103(a) based on *Gibson et al.* in view of *Gai et al.* (U.S. 6,651,096).

Whether claims 13 and 32 are obvious under 35 U.S.C. § 103(a) based on *Gibson et al.* in view of *Nilakantan et al.* (U.S. 5,541,911).

Whether claims 3 and 23 are obvious under 35 U.S.C. § 103(a) based on *Gibson et al.* and *Gai et al.* and further in view of *Nilakantan et al.*

Whether claims 5 and 25 are obvious under 35 U.S.C. § 103(a) based on *Gibson et al.* in view of *Haas* (U.S. 5,115,432).

Whether claims 17 and 36 are obvious under 35 U.S.C. § 103(a) based on *Gibson et al.* in view of *Sauter* (U.S. 5,537,546).

VII. ARGUMENT

A. CLAIMS 1, 4, 6, 8-9, 14-16, 18-21, 24, 26, 28, 33-35, AND 37-40 ARE NOT ANTICIPATED OVER GIBSON ET AL.

To anticipate a patent claim, every element and limitation of the claimed invention must be found in a single prior art reference, arranged as in the claim. *Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1383, 58 USPQ2d 1286, 1291 (Fed. Cir. 2001); *Scripps Clinic & Research Foundation v. Genentech, Inc.*, 927 F.2d 1565, 1576, 18 USPQ2d 1001, 1010 (Fed. Cir. 1991).

A prior art reference anticipates a patent claim if it discloses every limitation of the claimed invention, either explicitly or inherently. *In re Schreiber*, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1431 (Fed. Cir. 1997). “Under the principles of inherency, if the prior art necessarily functions in accordance with, or includes, the claimed limitations, it anticipates.” *MEHL/Biophile Int’l Corp. v. Milgraum*, 192 F.3d 1362, 1365, 52 USPQ2d 1303, 1305 (Fed. Cir. 1999).

Well-settled case law holds that the words of a claim must be read as they would be interpreted by those of ordinary skill in the art. *In re Baker Hughes Inc.*, 215 F.3d 1297, 55 USPQ2d 1149 (Fed. Cir. 2000); *In re Morris*, 127 F.3d 1048, 1054, 44 USPQ2d 1023, 1027 (Fed.

Cir. 1997); M.P.E.P. 2111.01. “Although the PTO must give claims their broadest reasonable interpretation, this interpretation must be consistent with the one that those skilled in the art would reach.” *In re Cortright*, 165 F.3d 1353, 1369, 49 USPQ2d 1464, 1465 (Fed. Cir. 1999).

The rejection of claims 1-40 must be reversed, because *Gibson et al.* does not disclose the limitations of the claims.

Independent claim 1, directed to a method of communication in a network access system, recites, **“transmitting a control message from the external processor to the programmable access device to establish a configuration of the programmable access device”** and **“communicating a first portion of the received messages from the programmable access device to the external processor for service processing in accordance with the configuration.”**

Independent claim 21, directed to a network access system, recites, **“an external processor that transmits a control message specifying a configuration”** and **“a programmable access device that receives messages from a first network external to the network access system via a first network interface, and that, responsive to the control message, establishes the configuration specified by the control message and communicates a first portion of the received messages to the external processor for service processing in accordance with the configuration.”**

Independent claim 40, directed to a distributed router, recites, **“a programmable access device configured to input messages from the first network via the first network interface”** and **“an external processor configured to receive, from the programmable access device, a first portion of the input messages and to transmit a control message to the programmable access device specifying a configuration to control the selection of the first portion.”**

In stark contrast, *Gibson et al.* (col. 1: 8-12) is concerned with establishing a bi-directional communication session between two endpoints in a communication network,

particularly with situations where it is required to provide a guaranteed quality of service for the connection.

Regarding the anticipation rejection of independent claims 1 and 21, the Examiner (Office Action dated September 27, 2004, p. 2) contends that “transmitting a control message from the external processor to the programmable access device to **establish a configuration of the programmable access device**” is disclosed by *Gibson et al.* at col. 24: 43-51, col. 23: 4-8, and col. 9: 40-44. The cited portions of *Gibson et al.* discuss the sending of a request for a communication session from an endpoint to an admission manager and the sending of a **validation and details of a chosen, reserved path for the requested session to the endpoint** together with an identifier for the reserved path. The Examiner (Office Action dated September 27, 2004, p. 3) further contends that “communicating a first portion of the received messages from the programmable access device to the external processor for service processing **in accordance with the configuration**” is disclosed by *Gibson et al.* at col. 24: 28-34 and col. 9: 32-34. However, at col. 9: 32-34, *Gibson et al.* merely states, “New communication sessions requested by an endpoint are sent to an admission manager that is associated with the endpoint,” and at col. 24: 28-35 *Gibson et al.* states:

The first event is the arrival at an endpoint 1100 of a **new session request** 1101. There is no restriction on the type of request this can be, though it must obviously be one the endpoint 1100 understands. This causes the endpoint 1100 to **send a COPS Request** (labelled A1) to its associated Admission Manager 1102. Upon receipt of this Request, the Admission Manager 1102 determines the path or paths it will attempt to use to route the session to its destination.

As best understood, the Examiner equates the recited “programmable access device” with an endpoint of *Gibson et al.* and the recited “external processor” with the admission manager 1102 of *Gibson et al.* However, there is no disclosure in *Gibson et al.* of communicating any messages, received by the endpoint, from the endpoint to the admission manager “for service

processing **in accordance with the configuration**” that is established supposedly as a result of “transmitting a control message from” the admission manager to the endpoint.

The Examiner (Advisory Action dated January 19, 2005) states:

Regarding the argument to claim 1, the applicant argues that the reference, Gibson does not disclose a control message specifying a configuration and processing a service in accordance with the configuration. The examiner disallows [sic], because as seen in Column 24, line 28-34 and Column 9, lines 32-34, Gibson discloses a system where the access node receives a user or application request for a new session which is a service, the access node sends a message to the control manager [sic], the control manager takes the necessary actions to create a MPLS service for the user or application and inform all nodes of the new label and session, form [sic] that point on all the nodes in the system route the session based on the configuration that the control setup.

Appellants respectfully submit that the Examiner disregards the substance of the recited “transmitting a control message from the external processor to the programmable access device to **establish a configuration of the programmable access device**” and “communicating a first portion of the received messages from the programmable access device to the external processor for service processing **in accordance with the configuration**” and focuses instead on the “communicating” step with no regard to “**in accordance with the configuration**” which is clearly recited by independent claim 1, and which is discussed above. To anticipate, every element and limitation of the claimed invention must be found in a single prior art reference, arranged as in the claim. *Karsten Mfg. Corp. v. Cleveland Golf Co., supra*. The Examiner has failed to meet this burden, and thus, the rejection of independent claim 1 should be reversed.

Moreover, Appellants respectfully submit that independent claim 21 recites, “an **external processor that transmits a control message specifying a configuration**” and “a programmable access device that receives messages from a first network external to the network access system via a first network interface, and that, **responsive to the control message, establishes the configuration specified by the control message and communicates a first portion of the**

received messages to the external processor for service processing in accordance with the configuration.” Similarly as discussed above with regard to claim 1, there is no disclosure in *Gibson et al.* of communicating any messages, received by the endpoint, from the endpoint to the admission manager “for service processing **in accordance with the configuration**” that is established as a result of “a control message specifying a configuration” that is supposedly transmitted from the admission manager. Thus, the rejection of independent claim 21 should also be reversed.

Regarding independent claim 40, the Examiner (Office Action dated September 27, 2004, p. 5) contends that the recited “external processor configured to receive, from the programmable access device, a first portion of the input messages and to **transmit a control message to the programmable access device specifying a configuration to control the selection of the first portion**” is disclosed by *Gibson et al.* at col. 24: 28-34 and col. 9: 32-34. For reasons similar to those discussed above with regard to independent claims 1 and 21, Appellants respectfully submit that the recited features of claim 40 are also not disclosed by *Gibson et al.* To anticipate, every element and limitation of the claimed invention must be found in a single prior art reference, arranged as in the claim. *Karsten Mfg. Corp. v. Cleveland Golf Co., supra*. This requirement has not been met by the Examiner. Therefore, the rejection of claims 1, 21, and 40 is unsustainable and should be reversed.

The rejection of dependent claims 2, 4, 6, 8-9, 14-16, 18-20, 24, 26, 28, 33-35, and 37-39 should be reversed for at least the same reasons as those discussed above with regard to their respective independent claims, and these claims are separately patentable on their own merits.

For example, dependent claim 26 recites, “wherein the monitor control message specifies a threshold activity level.” The Examiner (Office Action dated September 27, 2004, p. 4)

correctly acknowledges that “Gibson does not explicitly indicate transmitting a monitor control message comprises transmitting a threshold activity level,” but cites col. 9: 32-37, without any explanation of why the rejection is appropriate. The rejection is confusing, as the Examiner admits the features are absent, but offers no explanation as to where or how such features can be met by the applied art. In the Advisory Action dated January 19, 2005, the Examiner states:

Regarding the argument to claim 26, the applicant argues that there is no explication [*sic*] about the rejection, because the rejection states that the reference does not indicate the limitation. The examiner notes that the does not indicate is a typo in the action, and that the reference does teach the limitation based on the Column 9, lines 32-37 as noted in the rejection.

However, the cited passage discloses nothing regarding any type of “threshold activity level,” but merely states, “New communication sessions requested by an endpoint are sent to an admission manager that is associated with the endpoint. That admission manager then uses the SIP++ protocol and a path for the requested session is determined and reserved in order to guarantee the requested quality of service.” Even if the cited passage were somehow construed as disclosing the “threshold activity level,” *Gibson et al.* would still fail in disclosing communicating any messages, received by the endpoint, from the endpoint to the admission manager “for service processing **in accordance with the configuration**” that is established as a result of “a control message specifying a configuration” that is supposedly transmitted from the admission manager of *Gibson et al.* To anticipate, every element and limitation of the claimed invention must be found in a single prior art reference, arranged as in the claim. *Karsten Mfg. Corp. v. Cleveland Golf Co., supra.*

Furthermore, dependent claim 14 recites, “transmitting a control message from the external processor to the programmable access device to establish a configuration of the programmable access device comprises transmitting a session deletion control message; and the

method further comprises the programmable access device deleting a session specified by the session deletion control message.” The Examiner (Office Action dated September 27, 2004, p. 4) contends that this feature is disclosed by *Gibson et al.* at col. 12: 7-14, col. 12: 65 - col. 13: 17, and Figure 3, which merely discuss an **endpoint** in a communications path terminating a call by issuing a BYE message **to the other endpoint**, and do not disclose the **admission manager 1102** transmitting a session delete control message to the endpoint discussed previously. In the Advisory Action dated January 19, 2005, the Examiner states:

Regarding the argument to claim 14, the applicant argues that the reference, Gibson does not disclose a session deletion message, but the issue of a BYE message, indicates to the system that the session is done and the configurations that enabled the MPLS for that session are now outdated and the entire network is notified that the session is over thus deleting the session from the network.

The Examiner disregards “transmitting a control message **from the external processor to the programmable access device**” recited by claim 14, as the Examiner’s apparent construction of the claims would require *Gibson et al.*’s **admission manager 1102** to issue the BYE message to the endpoint, which is neither disclosed nor suggested by *Gibson et al.* Unless the patent otherwise provides, a claim term cannot be given a different meaning in the various claims of the same patent. *Georgia Pacific Corp. v. U.S. Gypsum Co.*, 195 F.3d 1322, 1331, 52 USPQ2d 1590, 1598 (Fed. Cir., Nov. 1, 1999); see also *Southwall Tech., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1579, 34 USPQ2d 1673, 1679 (Fed. Cir. 1995) (holding that claim term found in different claims must be interpreted consistently); *Fonar Corp. v. Johnson & Johnson*, 821 F.2d 627, 632, 3 USPQ2d 1109, 1113 (Fed. Cir. 1987) (holding that a term used in one claim had the same meaning in another claim). Additionally, to anticipate, every element and limitation of the claimed invention must be found in a single prior art reference, arranged as in the claim. *Karsten*

Mfg. Corp. v. Cleveland Golf Co., supra. Again the Examiner has failed in this regard, and thus, the rejections should be reversed.

B. CLAIMS 2-3, 5, 7, 10-13, 17, 22-23, 25, 27, 29-32, AND 36 ARE NOT RENDERED OBVIOUS BY GIBSON AL., GAI ET AL., NILAKANTAN ET AL., HAAS, AND SAUTER.

The initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention under any statutory provision always rests upon the Examiner. *In re Mayne*, 104 F.3d 1339, 41 USPQ2d 1451 (Fed. Cir. 1997); *In re Deuel*, 51 F.3d 1552, 34 USPQ2d 1210 (Fed. Cir. 1995); *In re Bell*, 991 F.2d 781, 26 USPQ2d 1529 (Fed. Cir. 1993); *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In rejecting a claim under 35 U.S.C. § 103, the Examiner is required to provide a factual basis to support the obviousness conclusion. *In re Warner*, 379 F.2d 1011, 154 USPQ 173 (CCPA 1967); *In re Lunsford*, 357 F.2d 385, 148 USPQ 721 (CCPA 1966); *In re Freed*, 425 F.2d 785, 165 USPQ 570 (CCPA 1970).

The Patent Office must give specific reasons why one of ordinary skill in the art would have been motivated to combine the references. See, e.g., *In re Kotzab*, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000); *In re Rouffet*, 149 F.3d 1350, 1359, 47 USPQ2d 1453, 1459 (Fed. Cir. 1998).

The Administrative Procedures Act (APA) mandates the Patent Office to make the necessary findings and provide an administrative record showing the evidence on which the findings are based, accompanied by the reasoning in reaching its conclusions. See *In re Zurko*, 258 F.3d 1379, 1386, 59 USPQ2d 1693, 1697 (Fed. Cir. 2001); *In re Gartside*, 203 F.3d 1305, 1314, 53 USPQ2d 1769, 1774 (Fed. Cir. 2000). In particular, the Patent Office must articulate and place on the record the “common knowledge” used to negate patentability. *In re Zurko, id.*; *In re Lee*, 277 F.3d 1338, 1344-45, 61 USPQ2d 1430, 1434-35 (Fed. Cir. 2002).

1. **CLAIMS 2, 7, 10-12, 22, 27, AND 29-31 ARE NOT RENDERED OBVIOUS BY *GIBSON ET AL.* IN VIEW OF *GAI ET AL.***

Regarding the obviousness rejections of claims 2, 7, 10-12, 22, 27, and 29-31, Appellants respectfully submit that the deficiencies of *Gibson et al.* are not cured by the secondary reference of *Gai et al.*, particularly with respect to **“responsive to the control message, establishes the configuration specified by the control message and communicates a first portion of the received messages to the external processor for service processing in accordance with the configuration.”** *Gai et al.* (per Abstract) is concerned with efficiently organizing, storing, and evaluating access control lists for use by an intermediate network device of a computer network. *Gai et al.* is cited (Office Action dated September 27, 2004, p. 6) at col. 3: 55-57, col. 3: 17-40, and col. 8: 14-20 as supposedly teaching an improved way of configuring a network access device from an external source with access control lists and filtering out certain packets which are meant to be dropped, and at col. 6: 19-30 as supposedly teaching, in combination with *Gibson et al.*, “transmitting a control message comprises transmitting a policer control message to establish a configuration of a policer in the programmable access device,” “transmitting a control message comprises transmitting a control message to establish a configuration of a scheduler and one or more associated output buffers in the programmable access device,” “transmitting a control message comprises transmitting a shaper control message to establish a configuration of a shaper in the programmable access device,” and “transmitting a control message specifying a source from which packets are not to be accepted; and the method further comprises dropping packets from the specified source by the programmable access device” (Office Action dated September 27, 2004, p. 7).

Claim 10 recites, “transmitting a control message comprises transmitting a control message to establish a configuration of a scheduler and one or more associated output buffers in

the programmable access device.” The Examiner apparently relies on a mere mention by *Gai et al.* of “a scheduler 422” (col. 6: 21) as a subcomponent of a “forwarding entity 404” (col. 6: 18-20), in combination with *Gibson et al.*, as teaching these recited features of claim 10. However, there is no mention or suggestion of any “associated output buffers” for the scheduler 422. Further, there is no disclosure or suggestion by either reference, alone or in combination, of “transmitting a control message to **establish a configuration** of a scheduler **and one or more associated output buffers** in the” endpoint of *Gibson et al.* This lack of disclosure, coupled with the lack of any explanation of how these features are met by the references, contravenes 35 U.S.C. § 132, which requires the Director to “notify the applicant thereof, stating the reasons for such rejection.” This section is violated if the rejection “is so uninformative that it prevents the applicant from recognizing and seeking to counter the grounds for rejection.” *Chester v. Miller*, 906 F.2d 1574, 15 USPQ2d 1333 (Fed. Cir. 1990). This policy is captured in the Manual of Patent Examining Procedure. For example, MPEP § 706 states that “[t]he goal of examination is to clearly articulate any rejection early in the prosecution process so that applicant has the opportunity to provide evidence of patentability and otherwise respond completely at the earliest opportunity.” Furthermore, MPEP § 706.02(j) indicates that: “[i]t is important for an examiner to properly communicate the basis for a rejection so that the issues can be identified early and the applicant can be given fair opportunity to respond.” In the Advisory Action dated January 19, 2005, the Examiner states:

Regarding the argument to claim 10, the applicant argues that the combination of Gibson and Gai does not disclose any output buffers [*sic*]. The examiner disagrees, as seen in Column 6, lines 19-30, of the reference Gai, the combination includes a shaper and a queue, which buffere [*sic*] outputs.

However, at col. 6: 18-23 *Gai et al.* states, “Forwarding entity 404 may include a plurality of conventional sub-components configured to implement QoS treatments, such as a packet/frame classifier 420, a scheduler 422, a shaper entity 424, a marker entity 426, a dropper entity 428, and a queue selector/mapping entity 430.” There is no further reference in *Gai et al.* to either the “shaper entity 426” or the “queue selector/mapping entity 430,” much less any disclosure of how one mention of these entities by *Gai et al.* could suggest “transmitting a control message to **establish a configuration of a scheduler and one or more associated output buffers.**”

Moreover, the Examiner (Office Action dated September 27, 2004, p. 6), in the rejection of claims 2 and 22, contends that it would have been obvious “to combine Gibson’s system and Gai’s access control lists to give the access points more use than just security such as better identification of incoming packets and rules to follow (Column 3, lines 17-40).” However, the cited portion of *Gai et al.* states (col. 3: 17-34, emphasis added):

Access control lists are primarily used to provide security. Thus, for a given interface, only a single list is evaluated per direction. For purposes of security, moreover, the lists are relatively short. Nevertheless, **the evaluation of such lists by software modules can significantly degrade the intermediate device's performance (e.g., number of packets processed per second).** This degradation in performance has been accepted mainly due to a lack of acceptable alternatives. It is proposed, however, to expand the use of access control lists for additional features besides just security decisions. For example, **access control lists may also be used to determine whether a given packet should be encrypted and/or whether a particular quality of service (QoS) treatment should be applied.** Accordingly, it is anticipated that multiple access control lists may be assigned to a single interface. As additional access control lists are defined and evaluated per packet, the **reduction in performance will likely reach unacceptable levels.**

There is no mention of using the lists for “better identification of incoming packets and rules to follow” as the Examiner contends, but there is discussion of how use of the lists can **degrade performance.** As *Gibson et al.* is concerned with establishing bi-directional

communication sessions, particularly for telephony applications, wherein, in the preferred example, the established connection provides a guaranteed level of quality of service (see Abstract), there is no motivation to combine *Gibson et al.* and *Gai et al.*'s access control lists, as the addition of the lists would **degrade performance**, with no added benefit to *Gibson et al.*'s communication sessions. Obviousness rejections require some evidence in the prior art of a teaching, motivation, or suggestion to combine and modify the prior art references. *See, e.g., McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1351-52, 60 USPQ2d 1001, 1008 (Fed. Cir. 2001); *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1124-25, 56 USPQ2d 1456, 1459 (Fed. Cir. 2000); *In re Dembiczak*, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999).

Further, as the addition of the lists of *Gai et al.* would degrade performance of *Gibson et al.*'s communication sessions, the references teach away from their combination. It is improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 218 USPQ 769 (Fed. Cir. 1983). A prior art reference must be considered in this entirety including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). Further, if a proposed modification would render the prior art being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

In the Advisory Action dated January 19, 2005, the Examiner states:

Regarding the argument to the combination of Gibson and Gai, as seen in the motivation that access lists increase security of an access device, while it may decrease the speed of a system, it prevents further prevents [*sic*] unauthorized access thus improving preformance [*sic*] in the long run.

However, col. 3: 17-34, as part of the “Background” section of *Gai et al.*, is directed to disclosing access control lists as potentially leading to a “reduction in performance” that “will likely reach unacceptable levels,” which clearly teaches against using access control lists in *Gibson et al.* which, as discussed above, is concerned with establishing bi-directional communication sessions, particularly for telephony applications, wherein, in the preferred example, the established connection provides a guaranteed level of quality of service (see Abstract).

Thus, Appellants respectfully request reversal of the rejection with respect to claims 2, 7, 10-12, 22, 27, and 29-31.

2. CLAIMS 13 AND 32 ARE NOT RENDERED OBVIOUS BY GIBSON ET AL. IN VIEW OF NILAKANTAN ET AL.

With regard to the obviousness rejections of claims 13 and 32, Appellants respectfully submit that the deficiencies of *Gibson et al.* are also not cured by the secondary reference of *Nilakantan et al.*, which is cited (Office Action dated September 27, 2004, p. 8) as supposedly teaching “a system with a main server controller access nodes, where the main server can inform the access points to issue messages that it would normally have to send through the network.” Moreover, claim 13 recites, “in response to service processing by the external processor, injecting a packet from the external processor into packet flow through the programmable access device.” The Examiner (Office Action dated September 27, 2004, p. 8) contends that it would have been obvious “to use Nilakantan’s teachings of reducing traffic by allowing access nodes spoof messages from the server in Gibson’s system in order to reduce the number of messages that have to originate from the main server (Column 3, lines 24-43).” However, *Gibson et al.* makes no mention of any “access nodes” for which spoofing messages from a server could be useful, and,

as discussed previously, *Gibson et al.* is concerned with establishing bi-directional communication sessions, particularly for telephony applications, wherein, in the preferred example, the established connection provides a guaranteed level of quality of service (see Abstract). Thus, the reasons proffered by the Examiner for combining the references makes no sense, other than adding a level of useless complexity to *Gibson et al.* Obviousness rejections require some evidence in the prior art of a teaching, motivation, or suggestion to combine and modify the prior art references. *See, e.g., McGinley v. Franklin Sports, Inc., supra.*

The Examiner (Advisory Action dated January 19, 2005) states:

Regarding the argument to the combination of Gibson and Nilakatan [*sic*], the applicant argues that the combination would not make sense since Gibson does not disclose access nodes. The examiners [*sic*] disagrees, Gibson's end nodes are the same thing as access nodes, and perform the same functions.

Appellants respectfully submit that the "end nodes" of *Gibson et al.* have no need to spoof messages from a server, other than adding new levels of complexity to the system of *Gibson et al.* as discussed above. Thus, Appellants respectfully request reversal of the rejection with respect to claims 13 and 32.

3. CLAIMS 3 AND 23 ARE NOT RENDERED OBVIOUS BY GIBSON ET AL., GAI ET AL., AND NILAKANTAN ET AL.

Regarding the obviousness rejections of claims 3 and 23, Appellants respectfully submit that the deficiencies of *Gibson et al.* and *Gai et al.* are not cured by the further secondary reference of *Nilakantan et al.*, which is cited as supposedly disclosing a system with a main server and border nodes, where the main server can tell the border nodes to stop sending certain packets. Similarly to its rejection of claims 13 and 32, the Examiner (Office Action dated September 27, 2004, pp. 8-9) contends that it would have been obvious "to use Nilakantan's teachings of reducing traffic by allowing access nodes spoof messages from the server in

Gibson's system in order to reduce the traffic going to the main server (Column 2, lines 6-21).” However, as discussed above, *Gibson et al.* makes no mention of any “access nodes” for which spoofing messages from a server could be useful, and, as discussed previously, *Gibson et al.* is concerned with establishing bi-directional communication sessions, particularly for telephony applications, wherein, in the preferred example, the established connection provides a guaranteed level of quality of service (see Abstract). Thus, the reasons proffered by the Examiner for combining the references makes no sense, other than adding a level of useless complexity to *Gibson et al.* Obviousness rejections require some evidence in the prior art of a teaching, motivation, or suggestion to combine and modify the prior art references. See, e.g., *McGinley v. Franklin Sports, Inc., supra*. Thus, Appellants respectfully request reversal of the rejection with respect to claims 3 and 23.

4. **CLAIMS 5 AND 25 ARE NOT RENDERED OBVIOUS BY GIBSON ET AL. IN VIEW OF HAAS.**

Turning attention to the obviousness rejections of claims 5 and 25, Appellants respectfully submit that the addition of *Haas* also fails to satisfy “**responsive to the control message, establishes the configuration specified by the control message and communicates a first portion of the received messages to the external processor for service processing in accordance with the configuration.**” *Haas* (per Abstract) is concerned with a data communications architecture in which high level communications services provided to a host processor are arranged into independent horizontal functions that are processed in parallel. Conditional dependencies among the horizontal functions are resolved by a connector that interfaces the horizontal functions to an application layer of the host processor. A high-level protocol specification is obtained by choosing appropriate values for parameters of the horizontal

functions which are parametrically programmable. *Haas* is cited by the Examiner (Office Action dated September 27, 2004, p. 9) for a supposed teaching that an access device's configured policy should include a retransmissions policy. However, claim 5 recites, "transmitting a monitor control message comprises **transmitting a control message to establish a threshold number of allowed retransmissions.**" The Examiner does not address how the recited features are met by *Gibson et al.* and *Haas*, but instead merely contends that it would have been obvious "to use Haas' teachings of a **retransmission policy** on Gibson's network node reconfiguration system" with no discussion of how any "retransmission policy" of *Haas* would be implemented with *Gibson et al.*, much less any discussion of "transmitting a monitor control message comprises **transmitting a control message to establish a threshold number of allowed retransmissions,**" again in contravention of 35 U.S.C. § 132 as uninformative, and MPEP § 706.02(j), as discussed previously.

The Examiner (Advisory Action dated January 19, 2005) further states:

Regarding the argument to the combination of Gibson and Haas, the applicant argues that there is no motivation to use Haas's teachings in Gibson's system. The examiner disagrees, because Haas uses a retransmission policy in order to reduce traffic [sic] in a network and that policy would help any network that may have problems with having too many retransmissions such as Gibson's.

However, a careful study of *Gibson et al.* finds no mention of "retransmissions," much less any mention of "problems with having too many retransmissions" as contended by the Examiner. Obviousness rejections require some evidence **in the prior art** of a teaching, motivation, or suggestion to combine and modify the prior art references. See, e.g., *McGinley v. Franklin Sports, Inc., supra*. Thus, Appellants respectfully request reversal of the rejection with respect to claims 5 and 25.

5. **CLAIMS 17 AND 36 ARE NOT RENDERED OBVIOUS BY *GIBSON ET AL.* IN VIEW OF *SAUTER*.**

With regard to the obviousness rejections of claims 17 and 36, the combination of *Gibson et al.* and *Sauter* similarly fails to teach “**responsive to the control message, establishes the configuration specified by the control message and communicates a first portion of the received messages to the external processor for service processing in accordance with the configuration.**” *Sauter* (per Abstract) is directed to a protocol used for communication between a hypermedia system and a large number of interconnected editors communicating with a hyperstructure. The protocol uses a set of messages that allow each editor to manipulate and manage the contents of nodes, and it is also manipulated by the nodes and is accessible through a programming interface. *Sauter* is cited by the Examiner (Office Action dated September 27, 2004, p. 9) as supposedly teaching managing a network node with an API. However, there is no mention or suggestion anywhere in *Sauter* of establishing a configuration in response to a control message, and communicating a first portion of received messages to an external processor in accordance with the configuration.

Thus, Appellants respectfully request that the rejection with respect to claims 2-3, 5, 7, 10-13, 17, 22-23, 25, 27, 29-32, and 36 be reversed.

VIII. CONCLUSION AND PRAYER FOR RELIEF

For the foregoing reasons, Appellants request the Honorable Board to reverse each of the Examiner's rejections.

Respectfully Submitted,

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CLAIMS APPENDIX

1. (Previously Presented) A method of communication in a network access system including an external processor and a programmable access device, said method comprising:

transmitting a control message from the external processor to the programmable access device to establish a configuration of the programmable access device;

receiving, by the programmable access device, messages from a first network external to the network access system via a first network interface;

communicating a first portion of the received messages from the programmable access device to the external processor for service processing in accordance with the configuration; and

routing a second portion of the received messages not communicated to the external processor from the network access system via a second network interface different from the first network interface to a second network external to the network access system, wherein the second network is different from the first network.

2. (Previously Presented) The method of Claim 1, wherein:

transmitting a control message comprises transmitting a filter control message to establish a configuration of a packet header filter in the programmable access device; and

communicating messages comprises communicating network messages filtered from a packet flow by the packet header filter of the programmable access device.

3. (Original) The method of Claim 2, and further comprising limiting communication of network messages from the programmable access device to the external processor by sending the programmable access device a message setting message interface flags in the programmable access device.

4. (Original) The method of Claim 1, wherein:
transmitting a control message comprises transmitting a monitor control message to establish a configuration of a monitor in the programmable access device; and
communicating messages comprises communicating reporting messages from the programmable access device to the external processor in response to the configuration of the monitor.
5. (Original) The method of Claim 4, wherein transmitting a monitor control message comprises transmitting a control message to establish a threshold number of allowed retransmissions.
6. (Previously Presented) The method of Claim 4, wherein transmitting a monitor control message comprises transmitting a threshold activity level.
7. (Original) The method of Claim 1, wherein transmitting a control message comprises transmitting a policer control message to establish a configuration of a policer in the programmable access device.
8. (Original) The method of Claim 1, wherein transmitting a control message comprises transmitting a forwarding table control message to establish a configuration of a forwarding table in the programmable access device.
9. (Original) The method of Claim 8, wherein establishing a configuration of a forwarding table comprises establishing a new forwarding table in the programmable access device.

10. (Original) The method of Claim 1, wherein transmitting a control message comprises transmitting a control message to establish a configuration of a scheduler and one or more associated output buffers in the programmable access device.

11. (Original) The method of Claim 1, wherein transmitting a control message comprises transmitting a shaper control message to establish a configuration of a shaper in the programmable access device.

12. (Original) The method of Claim 1, wherein:

transmitting a control message from the external processor to the programmable access device to establish a configuration of the programmable access device comprises transmitting a control message specifying a source from which packets are not to be accepted; and the method further comprises dropping packets from the specified source by the programmable access device.

13. (Original) The method of Claim 1, and further comprising in response to service processing by the external processor, injecting a packet from the external processor into packet flow through the programmable access device.

14. (Original) The method of Claim 1, wherein

transmitting a control message from the external processor to the programmable access device to establish a configuration of the programmable access device comprises transmitting a session deletion control message; and the method further comprises the programmable access device deleting a session specified by the session deletion control message.

15. (Original) The method of Claim 1, and further comprising the external processor signaling network hardware to establish a network connection in response to receipt of a message from the programmable access device.

16. (Original) The method of Claim 1, and further comprising exchanging keepalive messages between the external processor and the programmable access device.

17. (Original) The method of Claim 1, wherein transmitting a control message comprises accessing a control processor on the external processor via an application programming interface.

18. (Original) The method of Claim 1, and further comprising in response to said control message, sending an acknowledgement from said programmable access device to said external processor.

19. (Original) The method of Claim 1, and further comprising communicating a state of a session from the programmable access device to the external processor in response to failure of a service controller servicing the session in the external processor.

20. (Original) The method of Claim 1, wherein transmitting a control message comprises transmitting a control message via an intermediate communication network.

21. (Previously Presented) A network access system, comprising:

an external processor that transmits a control message specifying a configuration; and

a programmable access device that receives messages from a first network external to the network access system via a first network interface, and that, responsive to the control message, establishes the configuration specified by the control message and communicates a first portion of the received messages to the external processor for

service processing in accordance with the configuration, and forwards a second portion of the received messages not communicated to the external processor for routing, via a second network interface different from the first network interface, to a second network external to the network access system, wherein the second network is different from the first network.

22. (Original) The network access system of Claim 21, wherein:

the programmable access device includes a packet header filter;

the control message comprises a filter control message that establishes a configuration of the packet header filter; and

the messages communicated by the programmable access device comprise network messages filtered from a packet flow by the packet header filter of the programmable access device.

23. (Original) The network access system of Claim 22, said external processor comprising means for limiting communication of network messages from the programmable access device to the external processor by sending the programmable access device a message setting message interface flags in the programmable access device.

24. (Original) The network access system of Claim 21, wherein:

the programmable access device comprises a monitor for network traffic;

the control message comprises a monitor control message that specifies a configuration of the monitor; and

the messages communicated by the programmable access device comprise reporting messages in accordance with the configuration.

25. (Original) The network access system of Claim 24, wherein the control message specifies a threshold number of allowed retransmissions.

26. (Original) The network access system of Claim 24, wherein the monitor control message specifies a threshold activity level.

27. (Original) The network access system of Claim 21, wherein:
the programmable access device comprises a policer, and
the control message comprises a policer control message that specifies a configuration of the policer.

28. (Original) The network access system of Claim 21, wherein the control message comprises a forwarding table control message that specifies a configuration for a forwarding table.

29. (Original) The network access system of Claim 21, wherein:
the programmable access device comprises one or more output buffers for outgoing packets
and an associated scheduler; and
the control message specifies a configuration of the scheduler and the one or more output buffers.

30. (Original) The network access system of Claim 21, wherein:
the programmable access device comprises a shaper; and
the control message comprises a shaper control that specifies a configuration of the shaper.

31. (Original) The network access system of Claim 21, wherein:
the control message specifies a source from which packets are not to be accepted; and

the programmable access device comprises means for dropping packets from the specified source.

32. (Original) The network access system of Claim 21, said external processor comprising means, responsive to service processing by the external processor, for injecting a packet into packet flow through the programmable access device.

33. (Original) The network access system of Claim 21, wherein the control message comprises a session deletion control message; and the programmable access device comprises means for deleting a session specified by the session deletion control message.

34. (Original) The network access system of Claim 21, wherein the external processor comprises a signaling processor that signals network hardware to establish a network connection in response to a message received from the programmable access device.

35. (Original) The network access system of Claim 21, said external processor and said programmable access device each comprising means for exchanging keepalive messages.

36. (Original) The network access system of Claim 21, wherein the external processor comprises a control processor that outputs said control message and an application programming interface through which said control processor is accessed.

37. (Original) The network access system of Claim 21, said programmable access device comprising means, responsive to said control message, for sending an acknowledgement to said external processor.

38. (Original) The network access system of Claim 21, wherein:

the external processor comprises a plurality of service controllers that provide service processing; and

the programmable access device comprises means for communicating a state of a session to the external processor in response to failure of a service controller servicing the session.

39. (Original) The network access system of Claim 21, and further comprising a network coupling the external processor and the programmable access device.

40. (Previously Presented) A distributed router comprising:

a first network interface through which packets are communicated with a first network;

a second network interface different from the first network interface through which packets are communicated with a second network different from the first network;

a programmable access device configured to input messages from the first network via the first network interface; and

an external processor configured to receive, from the programmable access device, a first portion of the input messages and to transmit a control message to the programmable access device specifying a configuration to control the selection of the first portion,

wherein the programmable access device forwards a second portion of the input messages not received by the external processor for routing via the second network interface to the second network.